

REMARKS**I. General**

The only issue outstanding in the instant application is that claims 26-28 stand rejected under 35 U.S.C. §103(a) as unpatentable over *Pierret*, U.S. Patent No. 5,046,066 (hereinafter *Pierret*).

Applicants wish to express their gratitude for the allowance of claims 1-25 and 29-55. However, applicants hereby traverse the outstanding rejections of claims 26-28, and request reconsideration and withdrawal of the outstanding rejections in light of the remarks contained herein. Claim 28 is amended above to correct typographical and punctuation errors and not for any substantial reason related to patentability. No new matter has been added by these amendments. Claims 1-55 are currently pending in this application.

II. Rejections under 35 U.S.C. §103(a)

Claims 26-28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Pierret*. Applicants respectfully traverse these rejections.

A. A Prima Facie case of obviousness has not been established.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art cited must teach or suggest all the claim limitations. See M.P.E.P. §2143. Without conceding the second criteria, Applicants respectfully assert that the rejection does not satisfy the first and third criteria.

1. Independent claim 26

The recited combination does not teach or suggest all limitations of claim 26.

In rejecting independent claim 26 the Office Action states that “**Pierret** discloses an equalizer ... comprising - generating a phase change versus frequency change curve for the path

(see **Figs. 4-11**). However, Applicants respectfully contend that *Pierret* fails to disclose the claim 26 limitation “generating a phase change versus frequency change curve for the path”. Cited FIGURES 4-11 of *Pierret* show phase versus frequency curves, not the claimed “phase change versus frequency change curve” (emphasis added).

Also, in the rejection of independent claim 26, the Office Action admits that *Pierret* does not teach “deriving the path’s delay from the slope of the line”. The Office Action attempts to cure this deficiency by modifying *Pierret*, stating “it is noted that the time of delay is the slope of its phase-frequency characteristic (see **Pierret**, col. 1, lines 26-28). Therefore, it would have been obvious to derive path’s delay from the slope of the line as claimed”. However, this modification of *Pierret*, does not teach or suggest this limitation of the claimed invention.

Pierret, at column 3, line 35, states:

The invention contemplates linearizing a phase-frequency characteristic by aligning a group of frequencies along a linear approximation to the original characteristic. The alignment consists of introducing sufficient delay to alter the characteristic so that the frequencies of the characteristic represented by the pivot points in the all pass filter arctan function can be connected by a line of constant slope.

Thus, as the Office Action admits *Pierret* does not teach the claimed “deriving the path’s delay from the slope of the line,” but rather teaches introducing sufficient delay in a circuit to provide a phase-frequency characteristic that can be represented by a line of constant slope. Therefore, applicants fail to understand how absent the use of hindsight one skilled in the art would derive the path’s delay from the slope of the line, particularly when *Pierret* teaches the inverse, introducing delay in a circuit to provide a phase-frequency characteristic represented by a line of constant slope.

The Office Action does not provide the requisite motivation addressing claim 26.

It appears the motivation provided by the Office Action for making the modification to *Pierret* was presented as:

Therefore, it would have been obvious to derive path’s delay from the slope of the line as claimed ... so that an approximate time delay can be obtained.

It is well settled that the fact that references can be combined or modified is not sufficient to establish a prima facie case of obviousness, M.P.E.P. §2143.01. The Office Action language quoted above is merely a statement that the reference can be modified, and does not state any desirability for making the modification.

The motivation provided for modifying *Pierret* to reach claim 26 is a circular statement. To emphasize the statement showing its circular nature: “Therefore, it would have been obvious to derive path’s delay from the slope of the line as claimed...so that an approximate time delay can be obtained.” This language merely states that it is obvious to make the modification because it is obvious to achieve the result. Such language is merely a statement that the reference can be modified, and does not state any desirability for making the modification. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ.2d 1430 (Fed. Cir. 1990), as cited in M.P.E.P. §2143.01. Thus, the motivation provided by the Examiner is improper, as the motivation must establish the desirability for making the modification.

Therefore, Applicants respectfully assert that at least for the above reasons, independent claim 26 is patentable over the 35 U.S.C. §103(a) rejection of record.

2. Dependent Claims 27 and 28

Claims 27 and 28 depend directly from base independent claim 26, and thus inherit all limitations of claim 26. Therefore, each of claims 27 and 28 set forth features and limitations not recited by *Pierret* as modified by the Office Action and for this reason alone are allowable over the rejections of record. Furthermore, claims 27 and 28 define limitations not taught or suggested by *Pierret* as modified by the Office Action.

Claim 27

In addressing claim 27 the Office Action fails to particularly point out limitations of the claim not taught or suggested by *Pierret*. The Office Action merely states “it would have been obvious to use the least square method when linearizing a non-linear curve.” Claim 27 defines “averaging a plurality of curve values using a least squares methodology.” Applicants note *Pierret* provides numerous formulas and calculations to be used in practicing its disclosed

invention. However, *Pierret* is silent concerning averaging using a least squares methodology. Since *Pierret* provides numerous formulas and calculations speaking to all aspects of its invention, Applicant respectfully asserts that by not teaching the use of averaging using a least squares methodology, *Pierret* teaches away from the presently claimed “averaging a plurality of curve values using a least squares methodology.”

Furthermore the motivation for making the modification to *Pierret* to reach claim 27 appears to also be circular in nature. The motivation for modifying *Pierret* to reach claim 27 was presented as:

It would have been obvious to use the least square method when linearizing a non-linear curve because this would provide an optimal estimation error in statistics, thereby resulting in averaging a plurality of curve values.

Emphasizing the circular nature of this statement “... it would have been obvious to use the least square method [an averaging methodology] when linearizing a non-linear curve because this would provide an optimal estimation error in statistics, thereby resulting in averaging a plurality of curve values”. This language also merely states that it is obvious to make the modification because it is obvious to achieve the result. As noted above, such language is merely a statement that the reference can be modified, and does not state any desirability for making the modification. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. Thus, the motivation provided by the Examiner is improper, as the motivation must establish the desirability for making the modification.

Claim 28

In addressing claim 28 the Office Action fails to particularly point out limitations of the claim not taught or suggested by *Pierret*. The Office Action merely states “...it would have been obvious to one skill in the art to modify **Pierret** for using a test signal with frequency increment as claimed.” claim 28 defines “applying a test signal having a first frequency at the path input” and “recording the phase difference between said measured phase and the first frequency”. *Pierret* fails to teach use of a test signal at all, much less in an incremental test over a range of frequencies. Further, cited FIGURES 4-11 of *Pierret* fail to show “recording the phase difference between said measured phase and the first frequency” as the graphs of FIGURES 4-11

only show phase versus frequency curves, not the phase difference between a measured phase and a frequency.

It appears the motivation for modifying *Pierret* to reach claim 28 was presented as:

“...it would have been obvious to one skill in the art to modify **Pierret** for using a test signal with frequency increment as claimed, in order to generate a phase change versus frequency change curve as shown in Figs. 4-11.”

As pointed out above the graphs of FIGURES 4-11 of *Pierret* fail to show a phase change versus frequency change curve, thus the motivation provided for modifying *Pierret* to reach claim 28 is inaccurate and insufficient.

Thus, Applicants respectfully assert that for the above reasons, as well as depending from an allowable base claim, claims 27 and 28 are patentable over the 35 U.S.C. §103(a) rejection of record.

3. Hindsight

Furthermore, Applicants respectfully assert that the Examiner is relying on impermissible hindsight in order to piece together the elements of claims 26-28 based on knowledge gleaned from Applicants' disclosure. Applicants assert that without the teachings of Applicants' disclosure one of ordinary skill in the art would not find it obvious to modify *Pierret* to “derive path's delay from the slope of the line as claimed,” “use the least square method when linearizing” the present curve, or use “a test signal with frequency increment as claimed”.

Applicants respectfully contend that *Pierret* teaches a complete “Equalizer for Linearizing a Transmission Channel Phase-Frequency Response Utilizing Odd And Even Order All-Pass Networks,” including numerous calculations and formulas used to carry out the equalization, thereby teaching away from modification as proposed by the Office Action. Applicants further contend that the modifications made by the Office Action are inconsistent with the teachings of *Pierret* and would destroy the function of *Pierret*. Accordingly, Applicants fail to understand how one of ordinary skill in the art would be motivated to make the proposed modifications to *Pierret*, particularly absent a reference teaching these modifications, without use of the teachings of Applicants' disclosure. Therefore, the rejection of claims 26-28 should be withdrawn.

B. Examiner's Personal Knowledge

In the rejection of claim 26, the Office Action states:

Here, although **Pierret** is silence [sic] on the step of deriving the path's delay from the slope of the line, it is noted that the time of delay is the slope of its phase-frequency characteristic (see **Pierret**, col. 1, lines 26-28). Therefore, it would have been obvious to derive path's delay from the slope of the line as claimed.

In the rejection of claim 27, the Office Action states "... it would have been obvious to use the least square method when linearizing a non-linear curve," and in the rejection of claim 28, the Office Action states "... it would have been obvious to one skill in the art to modify **Pierret** for using a test signal with frequency increment as claimed."

In light of these statements by the Examiner, that such teachings are well known, Applicants believe that the Examiner has either relied on his own personal knowledge, or taken Official Notice, with respect to these matters. Under Rule 37 C.F.R. §1.104(d)(2), the Examiner is hereby requested to provide and make of record an affidavit setting forth his data as specifically as possible for these assertions. Alternatively, under M.P.E.P. §2144.03, the Examiner is hereby requested to cite a reference, or references, in support of these assertions. Otherwise the rejections of claims 26-28 should be withdrawn.

III. Conclusion

For all the reasons given above, Applicants respectfully submit that claims 26-28 distinguish over the prior art of record under 35 U.S.C. § (103). Accordingly, Applicants submit that this application is in full condition for allowance. Thus, the Examiner is respectfully requested to pass this application to issue.

Applicant believes no fee is due with this response. However, if a fee is due, please charge Deposit Account No. 06-2380, under Order No. 47586/P037US/09907157 from which the undersigned is authorized to draw. Applicants respectfully request that the Examiner call the below listed attorney if the Examiner believes the attorney can be helpful in resolving any remaining issues.

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Respectfully submitted,

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